

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Claims:

1. (Currently Amended) Particulates comprising silica, an aluminum oxide in an amount of less than about 25%, and at least one void, the particulates having a specific gravity of less than about 2.2, a particle size of 8 U.S. Mesh or smaller, and a substantially spherical shape, wherein the at least one void communicates between a point inside of the particulate, and a surface of the particulate and an environment surrounding the particulate.
2. (Original) The particulates of claim 1 comprising from about 30 percent to about 70 percent by weight silica.
3. (Previously Presented) The particulates of claim 1 comprising from about 0.1 percent to about 25 percent by weight aluminum oxide.
4. (Original) The particulates of claim 1 further comprising calcium oxides.
5. (Previously Presented) The particulates of claim 1 wherein the silica and aluminum oxide comprise combustion products of carbonaceous materials.
6. (Original) The particulates of claim 1 comprising a particle size of 25 U.S. mesh or smaller.
7. (Original) The particulates of claim 1 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.
8. (Currently Amended) The particulates of claim 1 wherein comprising at least a portion of the a-vitrified outer layer is vitrified.
9. (Canceled)
10. (Currently Amended) Particulates comprising at least about 30% silica, less than about 25% aluminum oxides, a plurality of internal voids, and a substantially spherical shape, wherein at least one of the plurality of internal voids communicates between a point inside of the particulate, and a surface of the particulate and an environment surrounding the particulate.
11. (Original) The particulates of claim 10 comprising at least about 40 percent by weight silica.

12. (Original) The particulates of claim 10 comprising less than about 20% by weight aluminum oxides.

13. (Original) The particulates of claim 10 further comprising calcium oxides.

14. (Original) The particulates of claim 10 wherein the silica and aluminum oxides comprise combustion products of carbonaceous materials.

15. (Original) The particulates of claim 10 comprising a particle size of 25 U.S. mesh or smaller.

16. (Original) The particulates of claim 10 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.

17. (Currently Amended) The particulates of claim 10 wherein comprising at least a portion of the a-vitrified outer layer is vitrified.

18. (Withdrawn) A method of making a low-specific gravity particulate comprising the steps of:

(a) providing combustion products of carbonaceous materials comprising silica and an aluminum oxide,

(b) mixing the combustion products with a binder to create a pelletizable mixture;

(c) pelletizing the combustion products of carbonaceous materials to create a pellet, and

(d) sintering the combustion products of carbonaceous materials to create a particulate comprising silica and an aluminum oxide and at least one void and having a specific gravity of less than about 2.2, a particle size of 8 U.S. Mesh or smaller, and a substantially spherical shape.

19. (Withdrawn) The method of claim 18 wherein the particulate comprises from about 30 percent to about 70 percent by weight silica.

20. (Withdrawn) The method of claim 18 wherein the particulate comprises from about 0.1 percent to about 25 percent by weight aluminum oxides.

21. (Withdrawn) The method of claim 18 wherein the particulate further comprises calcium oxides.

22. (Withdrawn) The method of claim 18 wherein the particulate further comprises a particle size of 25 U.S. mesh or smaller.

23. (Withdrawn) The method of claim 18 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.

24. (Withdrawn) The method of claim 18 wherein the sintering step occurs at a temperature above about 1000°C.

25. (Withdrawn) The method of claim 18 further comprising, between steps (c) and (d), the step of: drying the pellet at a temperature between about 65°C to about 150°C.

26. (Withdrawn) The method of claim 18 further comprising, between steps (c) and (d), the step of roasting the pellet at a temperature of above about 200°C.

27. (Withdrawn) The particulates of claim 18 comprising a vitrified outer layer.

28. (Withdrawn) The particulates of claim 18 wherein at least one void communicates between an interior of the particulate, and a surface of the particulate and environment surrounding the particulate.

29. (Withdrawn) A method of fracturing a subterranean formation comprising the steps of:

providing a first fluid;

providing a second fluid comprising particulates wherein the particulates comprise silica and an aluminum oxide, at least one void, a specific gravity of less than about 2.2, a particle size of 8 U.S. Mesh or smaller, and a substantially spherical shape;

placing a first fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein;

placing a second fluid into the subterranean formation and fracture;

reducing the viscosity of the first fluid;

reducing the viscosity of the second fluid so as to deposit the particulates into the fracture.

30. (Withdrawn) The method of claim 29 wherein the first fluid and the second fluid are the same fluid.

31. (Withdrawn) The method of claim 29 wherein the first fluid and the second fluid are not the same fluids.

32. (Withdrawn) The method of claim 31 wherein the viscosity of the first fluid is greater than the viscosity of the second fluid.

33. (Withdrawn) The method of claim 29 wherein the particulate comprises from about 30 to about 70 percent by weight silica.

34. (Withdrawn) The method of claim 29 wherein the particulate comprises from about 0.1 to about 25 percent by weight aluminum oxides.

35. (Withdrawn) The method of claim 29 wherein the particulate further comprises calcium oxides.

36. (Withdrawn) The method of claim 29 wherein the silica and aluminum oxides comprise combustion products of carbonaceous materials.

37. (Withdrawn) The method of claim 29 wherein the particulate comprises a particle size of 25 U.S. Mesh or smaller.

38. (Withdrawn) The method of claim 29 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.

39. (Withdrawn) The method of claim 29 wherein the particulate comprises a vitrified outer layer.

40. (Withdrawn) The method of claim 29 wherein at least one void of the particulate communicates between an interior of the particulate, and a surface of the particulate and environment surrounding the particulate.

41. (Withdrawn) A method of fracturing a subterranean formation comprising the step of:

providing a first fluid;

providing a second fluid that is different from the first fluid wherein the second fluid comprises particulates comprising silica and an aluminum oxide, a particle size of 8 U.S. Mesh or smaller, and a substantially spherical shape;

placing a first fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein;

placing a second fluid into the subterranean formation and fracture;

reducing the viscosity of the first fluid;

reducing the viscosity of the second fluid so as to deposit the particulates into the fracture.

42. (Withdrawn) The method of claim 41 wherein the viscosity of the first fluid is greater than the viscosity of the second fluid.

43. (Withdrawn) The method of claim 41 wherein the particulate comprises from about 30 to about 70 percent by weight silica.

44. (Withdrawn) The method of claim 41 wherein the particulate comprises from about 0.1 to about 25 percent by weight aluminum oxides.

45. (Withdrawn) The method of claim 41 wherein the particulate further comprises calcium oxides.

46. (Withdrawn) The method of claim 41 wherein the silica and aluminum oxides comprise combustion products of carbonaceous materials.

47. (Withdrawn) The method of claim 41 wherein the particulate comprises a particle size of 25 U.S. Mesh or smaller.

48. (Withdrawn) The method of claim 41 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.

49. (Withdrawn) The method of claim 41 wherein the particulate comprises a vitrified outer layer.

50. (Withdrawn) The method of claim 41 wherein at least one void of the particulate communicates between an interior of the particulate, and a surface of the particulate and environment surrounding the particulate.

51. (Withdrawn) A method of installing a gravel pack in a well bore comprising the steps of:

providing a gravel pack composition comprising particulate and a delivery fluid wherein the particulates comprise silica and an aluminum oxide, at least one void, a specific gravity of less than about 2.2, a particle size of 8 U.S. Mesh or smaller, and a substantially spherical shape;

introducing the gravel pack composition to the well bore such that the particulates form a gravel pack substantially adjacent to the well bore.

52. (Withdrawn) The method of claim 51 wherein the particulate comprises from about 30 to about 70 percent by weight silica.

53. (Withdrawn) The method of claim 51 wherein the particulate comprises from about 0.1 to about 25 percent by weight aluminum oxides.

54. (Withdrawn) The method of claim 51 wherein the particulate further comprises calcium oxides.

55. (Withdrawn) The method of claim 51 wherein the silica and aluminum oxides comprise combustion products of carbonaceous materials.

56. (Withdrawn) The method of claim 51 wherein the particulate comprises a particle size of 25 U.S. Mesh or smaller.

57. (Withdrawn) The method of claim 51 wherein the particulate is capable of withstanding a closure stress of at least about 2,500 psi.

58. (Withdrawn) The method of claim 51 wherein the particulate comprises a vitrified outer layer.

59. (Withdrawn) The method of claim 51 wherein at least one void of the particulate communicates between an interior of the particulate, and a surface of the particulate and environment surrounding the particulate.

60. (New) The particulates of claim 1 further comprising a treatment chemical.

61. (New) The particulates of claim 60 wherein the treatment chemical comprises at least one chemical selected from the group consisting of: a gel breaker, an oxidizer, an enzyme, a hydrolysable ester, a scale inhibitor, a biocide, a corrosion inhibitor, and a paraffin inhibitor.

62. (New) The particulates of claim 10 further comprising a treatment chemical.

63. (New) The particulates of claim 62 wherein the treatment chemical comprises at least one chemical selected from the group consisting of: a gel breaker, an oxidizer, an enzyme, a hydrolysable ester, a scale inhibitor, a biocide, a corrosion inhibitor, and a paraffin inhibitor.